

**REMARKS**

Claims 1-20 have been examined and have been rejected under 35 U.S.C. § 102(b).

**I. Preliminary matters**

**A. Objection to the specification**

The Examiner has objected to the specification because the cross section of the base 53 should allegedly be described as a “T-shaped cross section” instead of as an “L-shaped cross section”. Applicant submits that the cross section of the base 53 can be described as either “T-shaped” or “L-shaped”. For example, as shown in Fig. 2, the cross section of the base 53, which is parallel to the IC board 54, has an “L-shape” or a “U-shape”, and the cross section of the base 53, which is perpendicular to the IC board 54, has a “T-shape”. Furthermore, the “T-shape” cross section includes two “L-shaped” cross sections.

Nonetheless, in order to expedite prosecution, Applicant has amended the specification as suggested by the Examiner.

**B. Objection to the drawings**

The Examiner has objected to the drawings because they allegedly do not show the contact recited in claims 7-9, 15-18, and 20. Applicant submits that the figures show illustrative, non-limiting embodiments of the claimed contact.

For example, in one non-limiting embodiment of claim 7, the circuit board 63 and connecting member 47 correspond to the claimed contact and connecting member, respectively. Figs. 8 and 9 show that the circuit board 63 contacts the connecting member 47. Accordingly,

Applicant submits that the figures show an illustrative example of the contact recited in claim 7. Also, Applicant submits that the figures show the contacts recited in claims 8, 9, 15-18, and 20 for similar reasons.

## **II. Rejection under 35 U.S.C. § 102(b) over U.S.P. 5,148,194 to Asai et al. ("Asai")**

Claims 1-20 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Asai.

### **A. Claim 1**

Applicant submits that claim 1 is not anticipated by (and would not have been obvious over) the first embodiment shown in Figs. 7-9 of Asai. For example, claim 1 states that the ink cartridges respectively comprise ink supply ports and that ink supply needles of a cartridge accommodating portion are inserted into the ink supply ports when the ink cartridges are attached to the cartridge accommodating portion. However, Fig. 9 of Asai merely illustrates recording heads 710-712, and the alleged accommodating portion 732 does not contain needles that are inserted into any ports of the recording heads 710-712.

Also, the second embodiment shown in Figs. 10-12 of Asai does not illustrate a cartridge accommodating portion at all. Therefore it cannot suggest the claimed accommodating portion that has needles that are inserted into ink supply ports of the head bodies 1016 shown in the figures.

In the third embodiment shown in Fig. 13, the recording head units 1301-1304 are attached to a carriage 1321, but the units 1301-1304 contain their own respective ink containers 1305-1308. As a result, the units 1301-1304 do not include any ink supply ports. Therefore,

assuming *arguendo* that the carriage 1321 generally corresponds to a cartridge accommodating portion, it does not have any needles that are inserted into ink supply ports of the units 1301-1304.

The fourth embodiment shown in Fig. 14 of Asai shows head units 1401-1404 which have a similar shape to the head units 1301-1304 shown in Fig. 13. Accordingly, the units 1401-1404 do not include any ink supply ports, and the carriage 1405 does not have any needles that are inserted into ink supply ports of the units 1401-1404 for reasons that are similar to the reasons presented above.

Also, the head units 1401-1404 contain recesses 1404b having trapezoidal-shaped cross sections and that contain projections 1404a having matching cross sections. Thus, adjacent head units 1401-1404 do not have a matching set that is shaped to permit the adjacent head units 1401-1404 to move relative with each other in a direction in which the units 1401-1404 are aligned as recited in the claim.

Applicant submits that claim 1 is patentable over the sixth embodiment shown in Fig. 16 for reasons that are similar to the reason presented above in conjunction with the third embodiment.

Also, Applicant submits that claim 1 is not anticipated by (and would not have been obvious over) the fifth and seventh embodiment shown in Figs. 15 and 17 of Asai for reasons that are similar to the reasons discussed above in conjunction with the fourth embodiment.

Furthermore, the remaining embodiments of Asai fail to suggest the all of the features of claim 1 for reasons that are similar to the reasons presented above.

**B. Claim 2**

Applicant submits that claim 2 is patentable over Asai. For example, base claim 1 states that the matching sets of opposed engaging portions are shaped and located such that the fitting structures between different pairs of adjacent ink cartridges are different in form. Furthermore, claim 2 states that each of the matching sets has a different shape.

The Examiner seems to contend that the recess A and projection B between the heads 710 and 711 shown in Fig. 8 of Asai correspond to one of the claimed matching sets and that the recess A and projection B between the heads 711 and 712 correspond to another one of the claimed matching sets. However, Applicant respectfully submits that the Examiner is misinterpreting and/or misapplying the teachings of the reference. For example, while the location of the matching set A and B between the heads 710 and 711 may be different than the location of the matching set A and B between the heads 711 and 712, each of the matching sets A and B has the same rectangular shape.

**C. Claim 3**

Applicant submits that claim 3 is patentable over Asai. For example, claim 3 states that the projection of one of the matching sets has a different shape than the projection of another one of the matching sets. On the other hand, as shown in Fig. 8 of Asai, the projections B all have the same shape.

**D. Claims 4 and 5**

Since claims 4 and 5 depend upon claim 1, Applicant submits that they are patentable at

least by virtue of their dependency.

**E. Claim 6**

Applicant submits that claim 6 is patentable over Asai. For example, claim 6 states that each ink cartridge includes a main body and a sub body connected to the main body and states that each engaging portion is formed in only the sub body of the associated ink cartridge. The Examiner contends that the bottom portions of the heads 710-712 shown in Fig. 8 correspond to the claimed main body and that the top portions of the heads 710-712 correspond to the claimed sub body. However, as shown in Fig. 8, recesses A and projections B are formed in both the top and bottom portions of the heads 710-712.

**F. Claim 7**

Applicant submits that claim 7 is patentable over Asai. For example, claim 7 states that the cartridge accommodating portion has a plurality of connecting members. The Examiner contends that the electrical lead means described at column 7, lines 28-29, of the reference corresponds to the claimed connecting members and that the support plate 732 corresponds to the claimed cartridge accommodating portion. However, Applicant submits that the Examiner is misinterpreting and/or misapplying the teachings of the reference.

For example, column 7, lines 25-29, states

[N]umeral 708 denotes a ceramic substrate on which the heat generating resistor [702] is mounted. A recess A is formed in a manufacturing step of the ceramic substrate. A wiring or electrical-lead means (not shown) for supplying an electrical signal to the heat generating resistor 702 is formed on the substrate.

(Emphasis added). As clearly described in the reference, the electrical-lead means is formed on the substrate 708. Since the substrate 708 is part of the head 710, 711, or 712, the electrical-lead means is not formed on the alleged “cartridge accommodating portion” 732. Accordingly, Applicant submits that claim 7 is patentable over Asai.

**G. Claims 8 and 9**

Since claims 8 and 9 depend upon claim 7, Applicant submits that they are patentable at least by virtue of their dependency. Also, Applicant has amended claim 9 for clarification purposes only and such amendments to claim 9 do not narrow the scope of the claim or raise any Festo implications.

**H. Claim 10-16**

Since claims 10-16 contain features that are similar to the features recited in claims 1-5 and 7-9, Applicant submits that they are patentable for similar reasons.

**I. Claim 17**

Since claim 17 contains features that are similar to the features recited in claim 7, Applicant submits that the claim is patentable for similar reasons.

**J. Claim 18**

Since claim 18 depends upon claim 17, Applicant submits that it is patentable at

least by virtue of its dependency. Also, Applicant has amended the claim for clarification purposes only and submits that the amendments to claim 18 do not narrow the scope of the claim or raise any Festo implications.

**K. Claim 19**

Since claim 19 contains features that are similar to the features recited in claim 1, Applicant submits that claim 19 is patentable for at least the reasons presented above.

**L. Claim 20**

Since claim 20 contains features that are similar to the features recited in claim 7, Applicant submits that the claim is patentable for similar reasons.

**III. Newly added claims**

Applicant has added new claims 21-36 to provide more varied protection for the present invention.

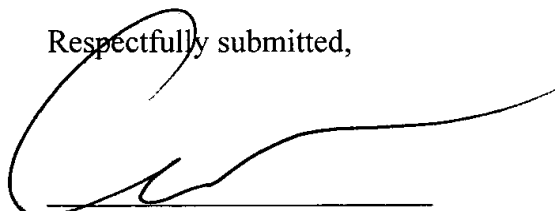
**IV. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment Under 37 C.F.R. § 1.111  
U.S. Appln. No. 09/974,046

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Grant K. Rowan', is written over a horizontal line.

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**APPENDIX**  
**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION:**

**The second full paragraph on page 7 of the specification has been amended as follows:**

A printing head 51 functions as the aforementioned printing mechanism and is located in the cartridge holder 41. The printing head 51 includes a base 53, a head unit 52, and an IC board 54. The base 53 has a substantially [L]T-shaped cross section. The head unit 52 discharges an ink drip. The IC board 54 controls the head unit 52. The base 53 includes a side wall 53a and a bottom 53b. The side wall 53a of the base 53 opposes the side wall 41a of the cartridge holder 41. The bottom 53b of the base 53 is secured to the lower side of the bottom 41b of the cartridge holder 41. A plurality of windows 55 are formed in the side wall 53a to oppose the corresponding windows 45 of the cartridge holder 41. Each connecting member 47 is thus fitted in the corresponding windows 45, 55.

**IN THE CLAIMS:**

**The claims are amended as follows:**

1. (Once amended) An ink cartridge for an inkjet printer,  
wherein the ink cartridge is one of ink cartridges that are detachably attached to a cartridge accommodating portion of the inkjet printer as aligned in parallel,  
each ink cartridge having at least one engaging portion formed at a side of the ink cartridge that faces an adjacent ink cartridge,

wherein a set of the opposed engaging portions of each pair of adjacent ink cartridges forms a matching set in which the engaging portions engage with each other to position the adjacent ink cartridges with respect to each other, [and]

wherein the matching sets are shaped and located such that a fitting structure between one pair of adjacent ink cartridges and a fitting structure between another pair of adjacent ink cartridges are different in form,

wherein the ink cartridges respectively comprise ink supply ports,

wherein the cartridge accommodating portion comprises ink supply needles,

wherein each of the ink supply needles corresponds to one of the ink supply ports,

wherein the ink supply needles are inserted into the ink supply ports in an insertion direction when the ink cartridges are attached to the cartridge accommodating portion, and

wherein each matching set is shaped to permit the adjacent ink cartridges to move relative with each other in a direction in which the ink cartridges are aligned.

3. (Once amended) An [The] ink cartridge [according to claim 1,] for an inkjet printer,

wherein the ink cartridge is one of ink cartridges that are detachably attached to a cartridge accommodating portion of the inkjet printer as aligned in parallel,

each ink cartridge having at least one engaging portion formed at a side of the ink cartridge that faces an adjacent ink cartridge,

wherein a set of the opposed engaging portions of each pair of adjacent ink cartridges forms a matching set in which the engaging portions engage with each other to position the

adjacent ink cartridges with respect to each other,

wherein the matching sets are shaped and located such that a fitting structure between one pair of adjacent ink cartridges and a fitting structure between another pair of adjacent ink cartridges are different in form,

wherein one engaging portion of each matching set is a projection and the other is a recess, and

wherein the projection of one of the matching sets has a different shape than the projection of another one of the matching sets.

6. (Once amended) An [The] ink cartridge [according to claim 1,] for an inkjet printer,

wherein the ink cartridge is one of ink cartridges that are detachably attached to a cartridge accommodating portion of the inkjet printer as aligned in parallel,

each ink cartridge having at least one engaging portion formed at a side of the ink cartridge that faces an adjacent ink cartridge,

wherein a set of the opposed engaging portions of each pair of adjacent ink cartridges forms a matching set in which the engaging portions engage with each other to position the adjacent ink cartridges with respect to each other,

wherein the matching sets are shaped and located such that a fitting structure between one pair of adjacent ink cartridges and a fitting structure between another pair of adjacent ink cartridges are different in form,

wherein each ink cartridge includes a main body and a sub body connected to the main

body, and each engaging portion is formed in only the sub body of the associated ink cartridge.

9. (Once amended) The ink cartridge according to claim 7, wherein both of the contacts of a first pair of adjacent ink cartridges contact [a common] a first one of the plurality of connecting members.

10. (Once amended) An ink cartridge for an inkjet printer,  
wherein the ink cartridge is one of ink cartridges that are detachably attached to a cartridge accommodating portion of the inkjet printer as aligned in parallel,  
each ink cartridge having at least one engaging portion formed at a side of the ink cartridge that faces an adjacent ink cartridge,  
wherein a set of the opposed engaging portions of each pair of adjacent ink cartridges forms a matching set in which the engaging portions engage with each other to position the adjacent ink cartridges with respect to each other, [and]  
wherein each matching set is formed only between predetermined two adjacent ink cartridges such that the ink cartridges are connected together as aligned in a predetermined order,  
wherein the ink cartridges respectively comprise ink supply ports,  
wherein the cartridge accommodating portion comprises ink supply needles,  
wherein each of the ink supply needles corresponds to one of the ink supply ports,  
wherein the ink supply needles are inserted into the ink supply ports in an insertion direction when the ink cartridges are attached to the cartridge accommodating portion, and  
wherein each matching set is shaped to permit the adjacent ink cartridges to move relative

with each other in a direction in which the ink cartridges are aligned.

12. (Once amended) The ink cartridge according to claim 10, wherein one engaging portion of each matching set is a projection and the other is a recess, and  
wherein the projection of one of the matching sets has a different shape than the  
projection of another one of the matching sets.

16. (Once amended) The ink cartridge according to claim 15, wherein both of the contacts of a first pair of adjacent ink cartridges contact [a common] a first one of the plurality of connecting members.

18. (Once amended) The ink cartridge according to claim 17, wherein both of the contacts of a first pair of adjacent ink cartridges contact [a common] a first one of the connecting members.

19. (Once amended) An inkjet printer, comprising:  
a cartridge accommodating portion; and  
a plurality of ink cartridges,  
wherein the ink cartridges are detachably attached to the cartridge accommodating portion as aligned in parallel,  
each ink cartridge having at least one engaging portion formed at a side of the ink cartridge that faces an adjacent ink cartridge,

wherein a set of the opposed engaging portions of each pair of adjacent ink cartridges forms a matching set in which the engaging portions engage with each other to position the adjacent ink cartridges with respect to each other, [and]

wherein the matching sets are shaped and located such that a fitting structure between one pair of adjacent ink cartridges and a fitting structure between another pair of adjacent ink cartridges are different in form,

wherein the ink cartridges respectively comprise ink supply ports,

wherein the cartridge accommodating portion comprises ink supply needles,

wherein each of the ink supply needles corresponds to one of the ink supply ports,

wherein the ink supply needles are inserted into the ink supply ports in an insertion direction when the ink cartridges are attached to the cartridge accommodating portion, and

wherein each matching set is shaped to permit the adjacent ink cartridges to move relative with each other in a direction in which the ink cartridges are aligned.